

AMENDMENTS TO THE CLAIMS

The following listing of the claims is provided in accordance with 37 C.F.R. §1.121.

1. (Currently Amended) A method for aligning images, comprising:
acquiring a first image and a second image;
identifying an anomaly ~~a feature of interest~~ in ~~[[a]]~~ the first image;
identifying the anomaly ~~a corresponding feature of interest~~ in ~~[[a]]~~ the second image;
registering ~~the feature of interest within~~ the first image with the ~~corresponding feature of interest within~~ the second image based on a property of the anomaly within the first image and on a corresponding property of the anomaly within the second image; and
storing registration data corresponding to registration.
2. (Original) The method of claim 1, further comprising displaying the registration data.
3. (Original) The method of claim 2, wherein displaying the registration data comprises displaying a cine serial view of the first image and the second image.
4. (Original) The method of claim 2, wherein displaying the registration data comprises displaying an overlay of the first image and second image in stack mode.
5. (Original) The method of claim 2, wherein displaying the registration data comprises displaying a composite image of the first image and the second image.
6. (Currently Amended) A method for registering images, comprising:
segmenting a feature of interest in a first image;

segmenting a corresponding feature of interest in a second image, wherein the first image and second image are acquired in different temporal settings;

registering the first image with the second image by aligning the feature of interest with the corresponding feature of interest; and

storing image data corresponding to registration.

7. (Cancelled)

8. (Original) The method of claim 6, wherein the first image and second image are acquired by the same modality.

9. (Original) The method of claim 6, wherein the first image and second image are acquired by different modalities.

10. (Original) The method of claim 6, wherein the first image and second image are X-ray images.

11. (Original) The method of claim 6, further comprising displaying the image data corresponding to registration.

12. (Currently Amended) The method of claim 11, wherein the image data is displayed in at least one of a cine serial display, an overlay in stack mode, ~~[[and]]~~ or a composite image.

13. (Currently Amended) A method for registering images, comprising:
segmenting a feature of interest in a first image;
segmenting ~~a corresponding~~ the feature of interest in a second image acquired subsequent to the first image;
determining a ~~first~~ reference point ~~[[on]]~~ of the feature of interest in the first image;

determining a ~~second~~ corresponding reference point ~~[[on]]~~ of the corresponding feature of interest in the second image.

registering the first image with the second image based on alignment of the ~~first~~ reference point in the first image with the ~~second~~ corresponding reference point in the second image; and

storing registration data corresponding to registration.

14. (Currently Amended) The method of claim 13, further comprising displaying the registration data in at least one of a cine serial display, an overlay in stack mode, ~~[[and]]~~ or a composite image.

15. (Currently Amended) The method of claim 13, wherein the feature of interest is ~~and the corresponding feature of interest~~ are an anomaly.

16. (Currently Amended) The method of claim 13, wherein the ~~first~~ reference point is the middle of the feature of interest in the first image; and the ~~second~~ corresponding reference point is the middle of the ~~corresponding~~ feature of interest in the second image.

17. (Original) The method of claim 13, wherein the first image and the second image are acquired in different temporal settings.

18. (Original) The method of claim 13, wherein segmenting is automated.

19. (Original) The method of claim 13, wherein registering is automated.

20. (Original) The method of claim 13, further comprising determining additional reference points and registering the first image with the second image based on the additional reference points.

21. (Currently Amended) A method for anchoring images, comprising:
identifying and sizing an anomaly ~~a feature of interest~~ in a first image of a subject;
identifying and sizing a corresponding anomaly ~~feature of interest~~ in a second image
of the subject;
locating a first reference point on the anomaly ~~feature of interest~~;
locating a second reference point on the corresponding anomaly ~~feature of interest~~;
registering the first image with the second image based on anchoring the first
reference point with the second reference point; and
storing registration data corresponding to registration.

22. (Currently Amended) The method of claim 21, wherein one or more
computer aided techniques are used to identify and size the anomaly ~~feature of interest~~ and
the corresponding anomaly ~~feature of interest~~.

23. (Currently Amended) The method of claim 21, wherein the anomaly
~~feature of interest~~ and the corresponding anomaly ~~feature of interest~~ are manually
identified.

24. (Original) The method of claim 21, wherein the first reference point and the
second reference point are location markers for the registration.

25. (Original) The method of claim 24, wherein registration comprises rigid
body registration transformation.

26. (Currently Amended) The method of claim 25, wherein the rigid body
registration transformation comprises at least one of a translation, a rotation, a
magnification, [[and]] or a shearing.

27. (Currently Amended) The method of claim 21, wherein registration comprises warped registration and at least one of an elastic transformation, a multi-scale approach, a multi-region approach, ~~[[and]]~~ or a pyramidal approach.

28. (Original) The method of claim 21, wherein the registration comprises a combination of a rigid body registration and a warped registration.

29. (Original) The method of claim 21, further comprising accessing the registration data to compare the first image with the second image.

30. (Currently Amended) The method of claim 21, further comprising accessing the registration data to compare the anomaly ~~feature of interest~~ with the corresponding anomaly ~~feature of interest~~.

31. (Currently Amended) The method of claim 30, further comprising displaying the registration data in at least one of a cine serial display, an overlay in stack mode, ~~[[and]]~~ or a composite image.

32. (Currently Amended) A system for registering images comprising:
one or more imaging systems for acquiring and storing images;
a first interface for accessing, reviewing, processing, and registering the images;
a storage for storing image registration data; and
a processor configured to register ~~wherein registration of~~ the images ~~[[is]]~~ based on alignment of corresponding features of interest in the images.

33. (Currently Amended) The system of claim 32, further comprising a second interface or monitor for displaying the registration data in at least one of a cine, a stack, an overlay, ~~[[and]]~~ or a composite.

34. (Original) The system of claim 33, wherein the first interface and the second interface are the same interface and are a PACS workstation.

35. (Original) The system of claim 32, further comprising an analog to digital device or scanner for converting analog film images to digital images.

36. (Original) The system of claim 32, wherein the images are digital images and digitally-acquired images.

37. (Original) The system of claim 32, wherein the images are digitized images and scanned images.

38. (Original) The system of claim 32 wherein the one or more imaging systems ~~are at least one of~~ comprise a conventional X-ray imaging system, a digital X-ray imaging system, a CT imaging system, ~~[[and]] a MR imaging system, or any combination thereof.~~

39. (Currently Amended) A system for comparing images, comprising:
means for identifying and locating an anomaly ~~a feature of interest~~ in a first image;
means for identifying and locating the anomaly ~~a corresponding feature of interest~~ in a second image;

means for registering ~~the feature of interest within~~ the first image with the ~~corresponding feature of interest within the~~ second image based on a location of the anomaly in the first image and on a corresponding location of the anomaly in the second image; ~~[[and]]~~

means for storing registration data corresponding to registration; and
means for displaying the registration data.

40. (Cancelled)

41. (Currently Amended) The system of claim ~~[[40]]~~ 39, further comprising means for displaying the registration data in at least one of a cine serial view, a stack mode, an overlay, ~~[[and]]~~ or a composite.

42. (Currently Amended) A system for registering images, comprising:
means for segmenting a feature of interest in a first image;
means for segmenting a corresponding feature of interest in a second image,
wherein the first image and second image are acquired in different temporal settings;
means for registering the first image with the second image by aligning the feature of interest with the corresponding feature of interest; and
means for storing image data corresponding to registration.

43. (Original) The system of claim 42, further comprising means for displaying the image data corresponding to registration.

44. (Currently Amended) A system for aligning images, comprising:
means for segmenting a feature of interest in a first image;
means for segmenting a corresponding feature of interest in a second image,
wherein the first image and the second image are acquired by different modalities;
means for determining a first reference point on the feature of interest in the first image;
means for determining a second reference point on the corresponding feature of interest in the second image;
means for registering the first image with the second image based on alignment of the first reference point with the second reference point;
means for storing registration data corresponding to registration; and
means for displaying the registration data.

45. (Currently Amended) A computer program, provided on ~~one or more~~ tangible computer readable media containing computer executable instruction, for registering images, comprising:

a routine for identifying a feature of interest in a first image;

a routine for identifying a corresponding feature of interest in a second image, wherein the first image and the second image are acquired in different temporal settings;

a routine for registering the feature of interest within the first image with the corresponding feature of interest within the second image; and

a routine for storing registration data corresponding to registration.

46. (Original) The computer program of claim 45, further comprising a routine for displaying the registration data.

47. (Original) The computer program of claim 46, further comprising a routine for displaying the registration data in at least one of a cine serial view, a stack mode, an overlay, [[and]] or a composite image.

48. (Currently Amended) A computer program, provided on ~~one or more~~ tangible computer readable media containing computer executable instructions, comprising:

a routine for segmenting a feature of interest in a first image;

a routine for segmenting a corresponding feature of interest in a second image, wherein the first image and the second image are acquired by different modalities;

a routine for registering the first image with the second image by aligning the feature of interest with the corresponding feature of interest; and

a routine for storing image data corresponding to registration.

49. (Original) The computer program of claim 48, further comprising a routine for displaying the image data corresponding to registration.

50. (Currently Amended) A computer program, provided on computer readable media containing computer executable instructions, for aligning images, comprising:

- a routine for segmenting a feature of interest in a first image;
- a routine for segmenting ~~a corresponding~~ the feature of interest in a second image;
- a routine for determining a ~~first~~ reference point on the feature of interest in the first image;
- a routine for determining a ~~second~~ corresponding reference point on the ~~corresponding~~ feature of interest in the second image;
- a routine for registering the first image with the second image based on alignment of the ~~first~~ reference point in the first image with the ~~second~~ corresponding reference point in the second image;
- a routine for storing registration data corresponding to registration; and
- a routine for displaying the registration data.

51. (New) The method of claim 50, wherein the first image and second image are acquired in different temporal settings, and wherein the feature of interest is substantially different in the first image as compared to the first image due to change of the feature of interest over time.

52. (New) The method of claim 1, wherein the property comprises a location of the anomaly in the first image, and wherein the corresponding property comprises a corresponding location of the anomaly in the second image.

53. (New) The method of claim 1, wherein the first image and second image are acquired by the same imaging system.

54. (New) The method of claim 1, wherein the first image and second image are acquired in different temporal settings.

55. (New) The method of claim 1, wherein the first image and second image are acquired at substantially the same time.

56. (New) The method of claim 17, wherein the feature of interest is substantially changed in actual size from the first image to the second image.